

Docket JP919990715US1

Appl. No.: 09/438,645
Filed: November 12, 1999REMARKS

Claim 3 was inadvertently not set out in the last reply by Applicant, as the Office action points out. Claim 3 is set out herein above.

Reference to "step (c)" in claim 2, line 20 is herein corrected to state "step (d)."

Reference to "step (c)" in claim 6 is herein corrected to state "step (d)."

Reference to "step (e)" in claim 6 is herein corrected to state "step (f)."

Claims 2-6, 10, 12-18 and 22 are pending in the application. All the claims stand rejected under 35 USC 103(a) as being unpatentable over US patent 6,446,028 ("Wang") in view of US patent 5,958,009 ("Friedrich").

The independent claims of the present application are patentably distinct from the art relied upon in at least the following respects: who measures performance, the homogenous nature of the load that is formulated and executed, iteration of the load, and the nature of the live maps that define the load. Moreover, Applicant feels the dependent claims of the present invention further point out features that are also significant, advantageous and deserving of weight.

Who measures performance. According to independent claims of the present application, a client forms a collection of live maps which identify transactions and include data required for the transactions, and sends the live maps to a server. The same client measures performance of the server. Alternatively, the server measures its own performance.

The Office action relies on Wang for these teachings, but Wang does not teach or suggest this. With respect to a client measuring performance, Wang specifically discusses shortcomings of, and thus teaches away from, prior art in which clients have stub code so that a client can measure performance of a server with which the client interacts. Wang, column 4, lines 1 through 67 ("Prior Art Performance Monitoring").

Regarding a server measuring its own performance of processing for a load it receives from the client, Wang discloses that a first server communicates with a client and a second server acts as a sniffer. Specifically, Wang FIG's 4 and 6 show a "main performance measurement monitor" 490 that monitors performance of a server 420 in FIG. 4 (performance monitor 690 monitoring server 680 in FIG. 6), or performance of a client-server interaction. Furthermore, Wang teaches that it is advantageous that "... the only change made to the network is the

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addition of the main performance measurement monitor 490." Wang, column 5, lines 18 through 20. This is contrasted to "... code placed at each client system and each server system ..."
Wang, column 5, lines 21 through 22. So Wang specifically teaches *adding* a server for performance monitoring so that a server processing of a load it receives from a client does not have to be modified in order to measure its own performance.

The Office Action merely contends that such a first and second server as disclosed by Wang can be considered as a single server entity and therefore this is like having a server monitor its own performance, as claimed in the present invention. The Office Action offers no rationale from Wang for this interpretation of Wang's teachings. The Office Action merely states flatly that a server can be represented as multiple servers.

As Applicant has pointed out, Wang discloses that according to his invention a second server is added for monitoring performance of work done for a client by a first server. Wang contrasts this to placing code at the first server system. If Wang's teachings were consistent with the view that the first and second server may be considered as one entity, then Wang would not state that adding the performance monitoring server avoids placing code at the first server, since Wang would consider the two servers to be the same entity. That is, if adding the performance monitoring server is merely adding to the first server and not adding a second entity, as the Office action contends, then adding the performance monitoring server *does* add code to the first server. But Wang says he does *not* add code to the first server.

Homogeneous execution. The independent claims of the present application state that the transactions of the collection are all for the *same computing application*. The performance measurement is further facilitated by this feature of the present invention, since all the transactions for a measured processing load are for the same application running on the server. It is difficult to account for uncontrolled load variations. This homogeneity tends to reduce uncontrolled variations. The limiting of the collection of maps to a single application advantageously enables exploration of server performance as performance responds to selective variation in the nature of the processing load. Specification, pages 9 through 11.

The Office action relies on Wang for these teachings, but Wang does not teach or suggest this. The Office Action asserts that Wang teaches a performance measurement server is running only a single program, the SAP R3 program, and therefore any "live maps" are inherently

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for a single programming application. However, Wang does not state that the program 181 of FIG. 2 is the only program running in server 180.

The Office action essentially argues that since Wang says there is one application running on the server and doesn't say there may also be a second application running, therefore Wang teaches there must be *only* one application running. From this the Office action concludes Wang teaches what is affirmatively and explicitly stated in the claims of the present application, that any live maps in a collection for the server must be for a single application. Applicant contends that silence in the prior art about whether a particular condition exists is insufficient to demonstrate that the prior art teaches that the condition *does* exist. The standard for patentability does not require that a patent applicant must show the applicant has invented something everyone else has been silent about and also must prove, regarding a feature of the applicant's invention, that everyone else explicitly says that the feature *does not exist*!

Furthermore, Wang specifically does disclose two servers running respective applications. Column 3, lines 58-63 (a server 180 running SAP application 181 requests information from a server 170 running a database application 171); FIG. 2. If it is correct to contend that two servers may be considered as one entity (see above discussion of who measures performance), then would it not be correct for Applicant to contend server 170 and server 180 may be considered a single server that is running two applications? Thus, by reasoning such as that of the Office action with respect to the above issue about who does performance monitoring, Wang discloses two applications 171 and 181 running on a single server entity 170/180 and there is nothing inherent in the "server" 170/180 that limits live maps to a single programming application.

Applicant respectfully contends that the limited reach of the teaching of the Wang reference and the bounds of the claims in the present case have not been given due consideration. Claim 2 in the present case, for example, now states that "the chosen computing application of the transaction for such a live map is the same for each of the live maps in the collection" and then "changing the number of said live maps and types of said transactions in the first collection of live maps transmitted to said server," etc. This is more than just a client sending transactions to a server, as disclosed by Wang and as is well known. Furthermore, the teaching of Wang regarding a client sending transactions to a server combined with a possible mere chance

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happenstance of all the transactions coincidentally being for a single computing application does not anticipate or obviate what is claimed in the present application. The present case teaches and claims that the client deliberately forms a *homogeneous* collection of live maps, that is, a collection in which *all the live maps are for the same computing application*, the performance responsive to the collection is measured, and then the client deliberately forms another homogeneous collection with a changed number of live maps, etc. The art of record does not teach or even suggest this.

Iterating. According to the present independent claims, the first collection of live maps (i.e., the collection on the client) is changed and transmitted from the client to the server, so that the server processing load resulting from the first collection of live maps is different than the load resulting from the next, changed collection. More specifically, the changing includes changing the number of live maps and types of transactions in the first collection of live maps. Then, the transactions for the new live maps are actually processed by the server and performance measuring is repeated.

This iterative process advantageously enables exploration of server performance as performance responds to selective variation in the nature of the processing load. Specification, pages 9 through 11.

The Office action relies on Wang for these teachings, but Wang does not teach or suggest this. The teaching by Wang relied upon in the Office action, column 8, lines 21 - 31, actually concerns a transaction between a client and a first server that includes the first server (presumably the one running the SAP application mentioned herein above) getting information from a second server (presumably the one running the database application mentioned herein above).

Live maps. The independent claims of the present invention state that the client forms a specific collection of information (referred to in the lexicography of the present application as "*live maps*") identifying transactions and including data required for the transactions. The claims were amended in Applicant's reply dated September 15, 2003, to state that a computing operation performed by the client resides in an application layer that communicates with a middleware layer on the client, that data for the chosen application included in the live maps include data

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formed at the client application layer, and that the collection of live maps is passed from the client application layer to the client middleware layer.

Applicant notes that the Office action does not indicate that Examiner considered Applicant's remarks submitted in Applicant's reply dated September 15, 2003. However, it appears that Examiner has done so, since Examiner now cites Friedrich in combination with Wang.

The packets disclosed in the cited Wang reference are TCP/IP packets relating to network and transport layers, which provide a lower level of information. <http://foldoc.doc.ic.ac.uk/foldoc/foldoc.cgi?network+layer> (network layer determines routing of packets of data from sender to receiver); <http://foldoc.doc.ic.ac.uk/foldoc/foldoc.cgi?transport+layer> (transport layer determines how to use the network layer to provide a virtual error-free, point to point connection so that host A can send messages to host B and they will arrive un-corrupted and in the correct order, including establishing and dissolving connections between hosts). Therefore the Office action relies on Friedrich for teachings about the application layer aspect of the present claims.

However, the present independent claims indicate, among other things, that data formed at a client's application layer is a collection of *live maps* for one and only one application and that the live maps are for the server to perform for the same client. Friedrich does not teach or suggest this. Friedrich merely teaches a generality. That is, Friedrich teaches that for performance measurement, sensors in a middleware layer can capture data pertaining to a client-server interaction by observing the information exchanged between the application and network layers in an application process. Column 11, lines 9-13. The claims in the present invention do not merely state that data is captured pertaining to a client-server interaction by observing the information exchanged between the application and network layers in an application process.

In order to more clearly convey the implications of the claimed features, Sketch One and Sketch Two are attached herewith. These Sketches are excerpts from the present patent application. Sketch One shows a collection of live maps and is from pages 8 and 9 of the present application. Sketch Two shows a reply map and is from pages 9 and 10 of the present application. The Sketches are marked up to ensure that what is stated in the specification of the present application is clearly conveyed.

Note that in Sketch One a particular "map file" (or "transaction"), I.VGRACC38.XXX.

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060, is shown with a box around it. The same transaction is also shown in Sketch Two with a box around it, in order to draw attention to the interrelation of the two data structures. Note also that formulating live maps at the application layer and passing live maps from the client to the server as shown in Sketch One enables the server to time stamp the specific application-layer defined transactions of the live maps, calculate a response time, and return a reply map to the client as shown in Sketch Two. In this manner the reply map has information provided to the client by the server set out on a basis that the server and client share in common.

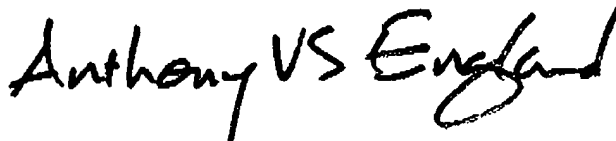
It should also be appreciated that this arrangement enables the client to time stamp the same transactions when it sends them to the sever and receives them back and to relate them to the transactions and time stamps the server returns. (Or the client could send the information to the server, i.e., vice versa with respect to the example shown.) In this way the client can compare its own computed elapsed time to that of the server for a specific transaction and can deduce the network latency.

REQUESTED ACTION

Applicant requests that the above distinctive and advantageous features of the claims in the present case be given due weight. Applicant contends that the claimed invention is patentably distinct from the cited art, and requests that the claims be allowed and promptly passed to issuance.

Attorney can be contacted at the telephone number below, or Examiner may wish to contact Attorney by e-mail at the address below if necessary to schedule a telephone call.

Respectfully submitted,



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Attached: Sketch One and Sketch Two, dated 1/6/2004

SKETCH ONE 1/6/2004

An example of Machine Workload Execution definition file is as follows:

*Execution Script for build56. Script. T1

* Subtype = EA

VGRACC38 VC38 I.VGRACC38. XXX. 060

VGRACCNO VCNO I.VGRACCNO. XXX. 035

VGRPRPDF VTDP I.VGRPRPDF. XXX. 005

VGRPRP06 VP06 I.VGRPRD06. XXX. 064

VGRACC01 VC01 I.VGRACC01. XXX. 068

VGRACC65 VC65 I.VGRACC65. XXX. 026

* Subtype = EA

VGRACC38 VC38. I.VGRACC38. XXX 060

VGRACCNO VCNOI.VGRACCNO. XXX. 004

VGRPRPDF VTPD I.VGRPRPDF. XXX 065

VGRPRD06 VT06 I.VGRPRD06. XXX. 015

VGRACC01 VC0 I.VGRACC01. XXX. 042

VGRACC69 VC69 I.VGRACC69. XXX. 032

* Subtype = EG

VGRACC38 VC38. I.VGRACC38. XXX. 003

VGRACCNO VCNOI.VGRACCNO. XXX. 013

VGRPRPF VTPD I. VGRPRPF. XXX. 116

VGRPRD06 VT06 I.VGRPRD06. XXX. 069

VGRACC01 VC01 I.VGRACC01. XXX. 096,

The third field is the name of the specific map file.

"COLLECTION OF
LIVE MAPS"
✓

ie "live map"

SKETCH TWO

The following table represents the individual transactions for the case of "end time", the second column represents the discrete individual "transactions", the third column shows the "start time", and the fourth column shows the overall response time.

ENDTIME	TRANSACTIONS	START T.	RESP. T.
11/26/98, 15:23:01, i.	VGRACCNO.xxx.059,	15:23:00,	0.94499345
11/26/98, 15:23:02, i.	VGRPRPDF .xxx. 065,	15:23:01,	1.52325305
11/26/98, 15:23:03, i.	VGRPRD06. xxx. 007,	15:23:02,	0.73049395
11/26/98, 15:23:04, i.	VGRPRD06. xxx. 091,	15:23:03,	1.096042
11/26/98, 15:23:07, i.	VGRACC01. xxx. 042,	15:23:04,	3.0945521
11/26/98, 15:23:09, i.	VGRACC05. xxx. 019,	15:23:07,	2.28059385
11/26/98, 15:23:13, i.	VGRACC38. xxx. 012,	15:23:09,	3.57596095
11/26/98, 15:23:14, i.	VGRACCNO.xxx.114,	15:23:13,	0.59853705
11/26/98, 15:23:15, i.	VGRPRPDF.xxx.005,	15:23:14,	1.61760075

REPLY MAP
✓

11/26/98, 15:28:34, i.	VGRACCNO.xxx.013,	15:28:34,	0.4899564
11/26/98, 15:28:34, i.	VGRPRPDF.xxx.014,	15:28:34,	0.43951875
11/26/98, 15:28:35, i.	VGRPRD06.xxx.064,	15:28:35,	0.33546205
11/26/98, 15:28:35, i.	VGRPRD06.xxx.007,	15:28:35,	0.41166125
11/26/98, 15:28:37, i.	VGRACC01.xxx.042,	15:28:35,	1.8305234
11/26/98, 15:28:38, i.	VGRACC05.xxx.098,	15:28:37,	1.0756061
11/26/98, 15:28:40, i.	VGRACC38.xxx.087,	15:28:38,	1.6714174
11/26/98, 15:28:40, i.	VGRACCNO.xxx.013,	15:28:40,	0.298258
11/26/98, 15:28:41, i.	VGRPRPDF.xxx.065,	15:28:40,	0.94981075
11/26/98, 15:28:42, i.	VGRPRD06.xxx.015,	15:28:41,	0.5698334
11/26/98, 15:28:44, i.	VGRACC01.xxx.042,	15:28:42,	2.63401085
11/26/98, 15:28:46, i.	VGRACC38.xxx.060,	15:28:44,	1.13616375
11/26/98, 15:28:46, i.	VGRACCNO.xxx.013,	15:28:46,	0.4442817
11/26/98, 15:28:47, i.	VGRPRPDF.xxx.065,	15:28:46,	0.7981063
11/26/98, 15:28:47, i.	VGRPRD06.xxx.091,	15:28:47,	0.4851278